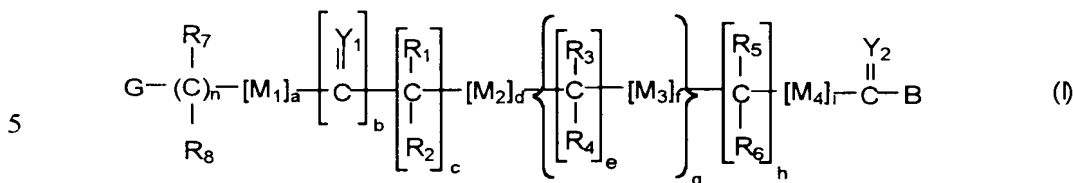


WE CLAIM:

1. A compound comprising the formula:



wherein:

G is a linear or branched polymer residue;

Y₁ and Y₂ are independently O, S, or NR₉;

10 M₁-M₃ are independently O, S, or NR₁₀;

M₄ is X or Q;

wherein X is an electron withdrawing group and Q is a moiety containing a free electron pair positioned three to six atoms from C(=Y₂);

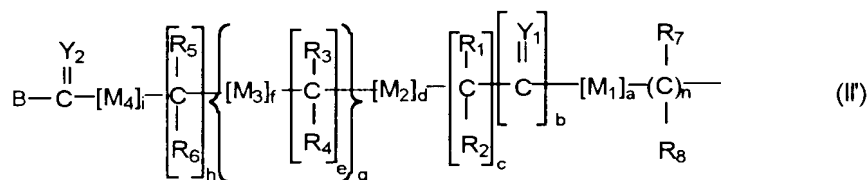
15 B is a residue of an amine-containing moiety or a residue of a hydroxyl-containing moiety;

R₁₋₁₀ are independently selected from the group consisting of hydrogen, C₁₋₆ alkyls, C₃₋₁₂ branched alkyls, C₃₋₈ cycloalkyls, C₁₋₆ substituted alkyls, C₃₋₈ substituted cycloalkyls, aryls, substituted aryls, aralkyls, C₁₋₆ heteroalkyls and substituted C₁₋₆ heteroalkyls;

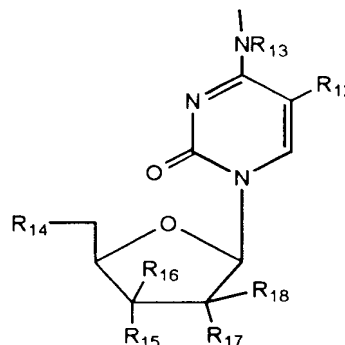
20 a, b, c, d, e, f, g, h, i and n are each independently zero or a positive integer.

2. The compound of claim 1, wherein G includes a capping group A, selected from the group consisting of hydrogen, CO₂H, C₁₋₆ alkyl moieties, and

25



16. The compound of claim 15, wherein said amine-containing moiety is



wherein

10 R_{12-13} are independently selected from the group consisting of hydrogen, C_{1-6} alkyls, C_{3-12} branched alkyls, C_{3-8} cycloalkyls, C_{1-6} substituted alkyls, C_{3-8} substituted cycloalkyls, aryls, halo, substituted aryls, aralkyls, C_{1-6} heteroalkyls, substituted C_{1-6} heteroalkyls;

15 R_{14-18} are independently selected from alkoxy, e.g. OR_{19} or, in the alternative, H, OH, N_3 , NHR_{20} , NO_2 or CN, fluoro, chloro, bromo, iodo, where R_{19-20} are independently selected from the same group which defines R_{12-13} .

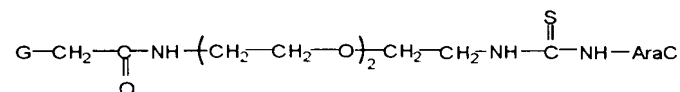
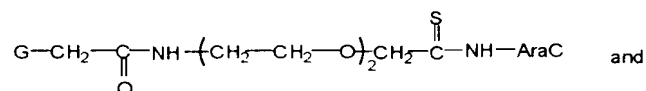
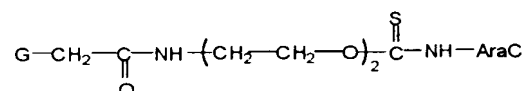
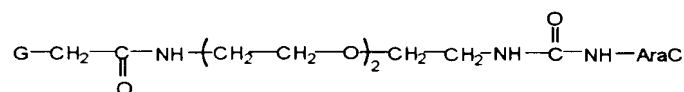
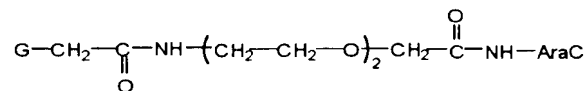
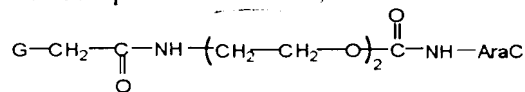
17. The compound of claim 1, wherein G is $\text{O}-(\text{CH}_2\text{CH}_2\text{O})_x$ or $\text{O}-(\text{CH}(\text{CH}_3)\text{CH}_2\text{O})_x$, wherein x is the degree of polymerization.

20 18. The compound of claim 17, wherein G is $\text{O}-(\text{CH}_2\text{CH}_2\text{O})_x$ and x is a positive integer selected so that the weight average molecular weight is at least about 20,000.

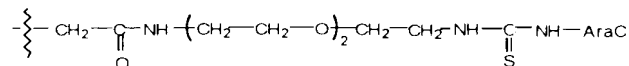
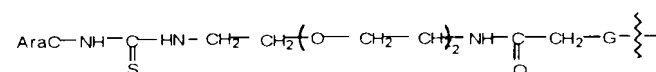
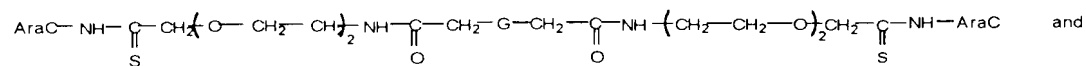
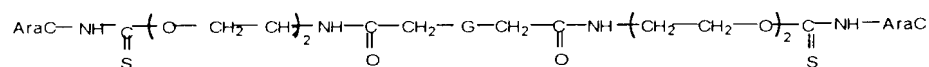
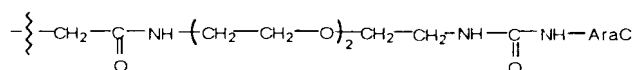
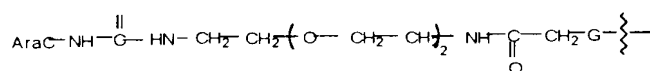
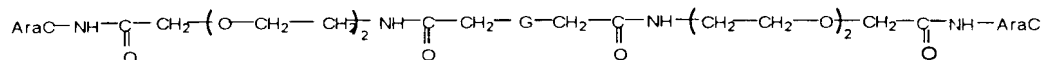
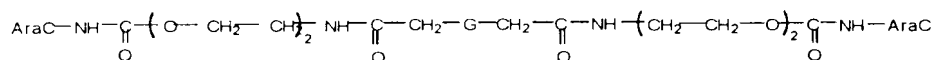
19. The compound of claim 18, wherein G has a weight average molecular weight of from about 20,000 to about 100,000.

25 20. The compound of claim 21, wherein G has a weight average molecular weight of from about 25,000 to about 60,000.

21. A compound of claim 1, selected from the group consisting of:

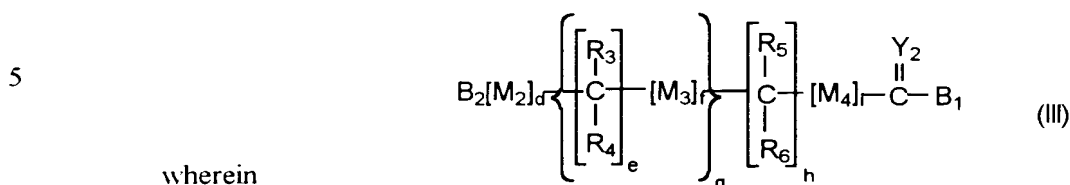


22. A compound of claim 3, selected from the group consisting of:



25. A method of preparing a polymeric conjugate, comprising:

a) reacting a biologically active moiety having an unprotected amine or hydroxyl group with a compound of the formula



wherein

B_1 is a leaving group capable of reacting with an unprotected amine or hydroxyl group;

10 B_2 is a cleavable protecting group;

Y_2 is O, S, or NR_9 ;

M_2 - M_3 are independently O, S, or NR_{10} ;

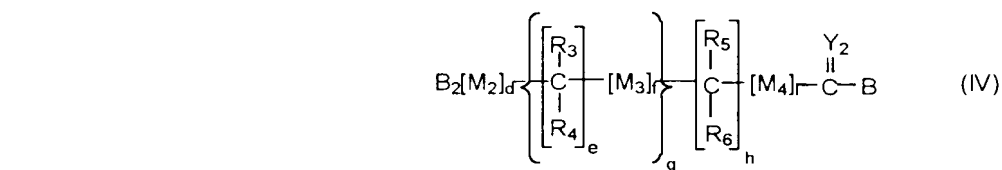
M_4 is X or Q;

15 wherein X is an electron withdrawing group and Q is a moiety containing a free electron pair positioned three to six atoms from $C(=Y_2)$;

R_{3-6} , R_9 and R_{10} are independently selected from the group consisting of hydrogen, C_{1-6} alkyls, C_{3-12} branched alkyls, C_{3-8} cycloalkyls, C_{1-6} substituted alkyls, C_{3-8} substituted cycloalkyls, aryls, substituted aryls, aralkyls, C_{1-6} heteroalkyls and substituted C_{1-6} heteroalkyls;

20 d , e , f , g , h , and i are each independently zero or a positive integer;

to form a protected intermediate of the formula:

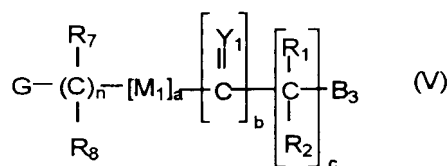


wherein

B is a residue of an amine-containing moiety or a residue of a hydroxyl-containing moiety;

b) deprotecting the resultant intermediate by removing B_2 ; and

c) reacting the deprotected intermediate with a compound of the formula



wherein

5 B_3 is a leaving group;

G is a polymer residue;

Y_1 is O, S, or NR_9 ;

M_1 is O, S, or NR_{10} ;

10 R_1, R_2, R_7, R_9 and R_{10} are independently selected from the group consisting of hydrogen, C_{1-6} alkyls, C_{3-12} branched alkyls, C_{3-8} cycloalkyls, C_{1-6} substituted alkyls, C_{3-8} substituted cycloalkyls, aryls, substituted aryls, aralkyls, C_{1-6} heteroalkyls and substituted C_{1-6} heteroalkyls;

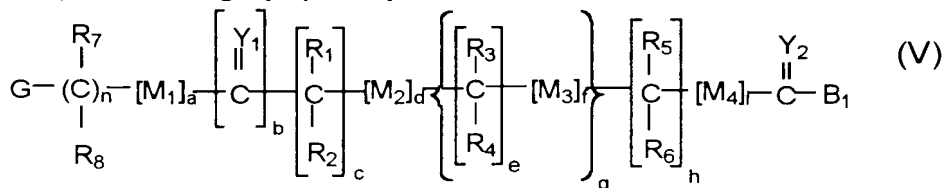
a, b and c are each independently zero or a positive integer,

whereby a polymeric conjugate is formed.

15

26. A method of preparing a polymeric conjugate, comprising:

a) reacting a polymer-spacer intermediate of the formula



20

wherein

B_1 is a leaving group capable of reacting with an unprotected amine or hydroxyl group;

25 G is a polymer residue;

Y_1 and Y_2 are independently O, S, or NR_9 ;

M_1-M_3 are independently O, S, or NR_{10} ;

M_4 is X or Q;

wherein X is an electron withdrawing group and Q is a moiety containing a free electron pair positioned three to six atoms from C(=Y₂);

B is a residue of an amine-containing moiety or a residue of a hydroxyl-containing moiety;

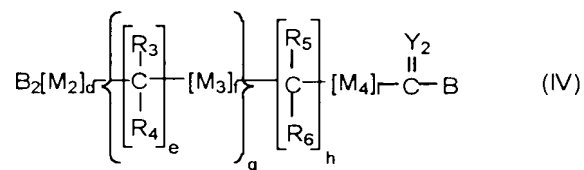
5 R₁₋₁₀ are independently selected from the group consisting of hydrogen, C₁₋₆ alkyls, C₃₋₁₂ branched alkyls, C₃₋₈ cycloalkyls, C₁₋₆ substituted alkyls, C₃₋₈ substituted cycloalkyls, aryls, substituted aryls, aralkyls, C₁₋₆ heteroalkyls and substituted C₁₋₆ heteroalkyls;

 a, b, c, d, e, f, g, h, i and n are each independently zero or a positive integer
10 and thereafter reacting intermediate with a biologically active moiety having an unprotected amine or hydroxyl group to form the polymeric conjugate.

27. A method of treatment, comprising:
administering to a mammal in need of such treatment an effective amount of a
15 compound of claim 1, wherein B is a residue of a biologically active moiety.

28. A method of treatment, comprising:
administering to a mammal in need of such treatment an effective amount of a
20 compound of claim 3, wherein B is a residue of a biologically active moiety.

29. A compound of the formula:



25 wherein

B is a residue of an amine-containing moiety or a residue of a hydroxyl-containing moiety;

B₂ is a cleavable protecting group;

Y₂ is O, S, or NR₉;

M_2 - M_4 are independently O, S, or NR_{10} .

M_4 is X or Q;

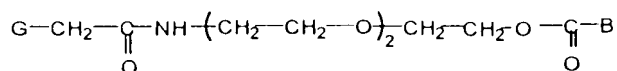
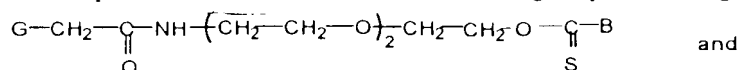
wherein X is an electron withdrawing group and Q is a moiety containing a free electron pair positioned three to six atoms from $C(=Y_2)$;

- 5 $R_{3-6, 9}$ and 10 are independently selected from the group consisting of hydrogen, C_{1-6} alkyls, C_{3-12} branched alkyls, C_{3-8} cycloalkyls, C_{1-6} substituted alkyls, C_{3-8} substituted cycloalkyls, aryls, substituted aryls, aralkyls, C_{1-6} heteroalkyls and substituted C_{1-6} heteroalkyls;

$d, e, f, g, h,$ and i are each independently zero or a positive integer.

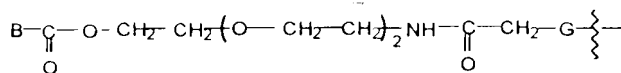
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30. A compound of claim 1, selected from the group consisting of:

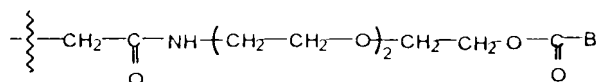


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31. A compound of claim 3, selected from the group consisting of:



20



and

